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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

SEMENENKO, YURIY

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/580,071	Applicant(s) KAMBARA ET AL.	
	Examiner YURIY SEMENENKO	Art Unit 2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/19/2009</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

[0007], [0008]: "FIG. 2" should be change to – FIG. 1 - ;

[0007]: "FIG. 3" should be change to – FIG. 2- .

0010]: "FIG. 5" should be change to – FIG. 3 or 4- .

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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2.1. Claims 1, 4, 7, 8, 11, 13, 14, 17 and 19 are rejected under 35U.S.C. 103(a) as being unpatentable over of Admitted by Applicant Prior Art (Background of Invention section), hereinafter AAPA in view of Hoag (US 4534032) hereinafter Hoag.

Regarding claim 1: AAPA discloses a lighting device for a lamp device [0002], [0003], [0011], comprising: a circuit board [0006]; and film capacitors 1, fig. 2-4, packaged on the circuit board by using leadless flow solders [0006], wherein each film capacitor 1 comprises polypropylene films 3, [0005], [0010] and lead wires 2, and terminals 5 and internal materials 3, 4 of the film capacitors 1 are leadless [0006],

except AAPA doesn't explicitly teach a material of the lead wires has a thermal conductivity lower than a thermal conductivity of copper.

Hoag teaches in fig. 3, 4 ballast capacitor 114 has the lead wires 112 and a material of the lead wires 112 is stainless steel (col. 5:22-25) which has a thermal conductivity lower than a thermal conductivity of copper.

Therefore it would have been obvious to one of ordinary skill in the art, at the time the invention was made for AAPA to include in his invention a material of the lead wires has a thermal conductivity lower than a thermal conductivity of copper, as taught by Hoag in order to prevent overheating the capacitor.

Regarding claim 8: AAPA discloses an illumination apparatus [0002], [0011], comprising: inherently a lamp [0003]; and a lighting device for lighting the lamp [0003], [0011], wherein the lighting device comprises a circuit board [0006]; and film capacitors 1, fig. 2-4 packaged on the circuit board by using leadless flow solders [0006], wherein each film capacitor comprises polypropylene films 3, [0005], [0010] and lead wires 2, and terminals 5 and internal materials 3, 4 of the film capacitors 1 are leadless [0009],

except AAPA doesn't explicitly teach a material of the lead wires has a thermal conductivity lower than a thermal conductivity of copper.

Hoag teaches in fig. 3, 4 ballast capacitor 114 has the lead wires 112 and a material of the lead wires 112 is stainless steel (col. 5:22-25) which has a thermal conductivity lower than a thermal conductivity of copper.

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Therefore it would have been obvious to one of ordinary skill in the art, at the time the invention was made for AAPA to include in his invention a material of the lead wires has a thermal conductivity lower than a thermal conductivity of copper, as taught by Hoag in order to prevent overheating the capacitor.

Regarding claim 14: AAPA discloses an illumination system [0002], [0011], comprising: inherently lamps [0003]; and at least one lighting device for lighting the lamps [0003], [0011]; wherein the lighting device comprises a circuit board [0006]; and film capacitors 1, fig. 2-4 packaged on the circuit board by using leadless flow solders [0006], wherein each film capacitor 1 comprises polypropylene films 3, [0005], [0011] and lead wires 2, and terminals 5 and internal materials 3, 4 of the film capacitors 1 are leadless, [0006],

except AAPA doesn't explicitly teach a material of the lead wires has a thermal conductivity lower than a thermal conductivity of copper.

Hoag teaches in fig. 3, 4 ballast capacitor 114 has the lead wires 112 and a material of the lead wires 112 is stainless steel (col. 5:22-25) which has a thermal conductivity lower than a thermal conductivity of copper.

Therefore it would have been obvious to one of ordinary skill in the art, at the time the invention was made for AAPA to include in his invention a material of the lead wires has a thermal conductivity lower than a thermal conductivity of copper, as taught by Hoag in order to prevent overheating the capacitor.

Regarding claims 4, 11 and 17: AAPA as modified by the teaching of Hoag discloses all the features of the claimed invention as applied to claim 1(8,14) above. Although AAPA doesn't explicitly teach a length of the lead wires from the circuit board to the film capacitor is 2mm or more after the film capacitors are packaged onto the circuit board, at time the invention was made, it was old and well-known that a length of the lead wires of the capacitors permits variations. And further, it has been held In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) that change in size of the configuration of the claimed device was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the

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claimed container was significant.

Therefore it would have been obvious to one of ordinary skill in the art, at time the invention was made for Ito to include in his invention a length of the lead wires from the circuit board to the film capacitor is 2mm or more after the film capacitors are packaged onto the circuit board in order overheating the capacitor and since it has been held In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) that change in size of the configuration of the claimed device was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed container was significant.

Regarding claims 7,13 and 19: AAPA as modified by the teaching of Hoag discloses all the features of the claimed invention as applied to claim 1(8,14) above, wherein circuit elements set on the circuit board are all leadless, (because device is built up by a leadless technology, as taught by AAPA [0009]).

2.2. Claims 2, 3, 9, 10 and 15-16 are rejected under 35U.S.C. 103(a) as being unpatentable over AAPA in view of Hoag as applied to claims 1, 4, 8, 11, 13, 14, 17 and 19 above, and further in view of Wong (US 4646197) hereinafter Wong.

Regarding claims 2, 9 and 15: AAPA as modified by the teaching of Hoag discloses all the features of the claimed invention as applied to claim 1(8, 14) above,

except AAPA doesn't explicitly teach a diameter of the lead wires is 0.6Ø (mm) or less.

Wong teaches a diameter of the lead wires is 0.6Ø (mm) or less (col. 3:48-50).

Therefore it would have been obvious to one of ordinary skill in the art, at the time the invention was made for AAPA to include in his invention a diameter of the lead wires is 0.6Ø (mm) or less, as taught by Wong in order to withstand high temperature as taught by Wong, (col. 1:54-58).

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Regarding claims 3, 10 and 16: AAPA as modified by the teaching of Hoag discloses all the features of the claimed invention as applied to claim 1(8,14) above,

except AAPA doesn't explicitly teach a cross-sectional area of the film capacitors is 35mm^2 or less.

Wong discloses in the "Background of the invention" section, at the time the invention was made, that it was well known to use capacitors, which has diameter smaller than 2.5mm which means a cross-sectional area of the capacitors is 35mm^2 or less. Further, it has been held In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) that change in size of the configuration of the claimed device was a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed container was significant.

Therefore it would have been obvious to one of ordinary skill in the art, at the time the invention was made for AAPA to include in his invention a cross-sectional area of the film capacitors is 35mm^2 or less, as taught by Wong in order to miniaturize electronic components, as taught by Wong, (col. 1:24-25).

Although AAPA doesn't explicitly teach a temperature at a terminal end of the lead wires in the film capacitors during a soldering process is 130°C or less, the Applicants teach in [0033] if material of the lead wire change from copper (Cu) to steel (Fe) and all of the conditions are maintained as it is described in claim 1, then a temperature at a terminal end of the lead wires in the film capacitors during a soldering process is 130°C or less, fig. 5, [0033]. AAPA as modified by the teaching of Hoag disclose all of such conditions as it is discussed above with respect to claim 1, so the already recited claim structural limitations should provide same results, namely a temperature at a terminal end of the lead wires in the film capacitors during a soldering process is 130°C or less. Further it has been held in re Casey, 152 USPQ 235 (CCPA 1967) And In re Otto, 136 USPQ 458, 459 (CCPA 1963. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Therefore it would have been obvious to one of ordinary skill in the art, at the

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time the invention was made for AAPA to include in his invention a temperature at a terminal end of the lead wires in the film capacitors during a soldering process is 130°C or less in order to prevent overheating the capacitor and since it has been held in re Casey, 152 USPQ 235 (CCPA 1967) And In re Otto, 136 USPQ 458, 459 (CCPA 1963. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Instant modified AAPA as modified by the teaching of Hoag clearly teaches the Applicant's claimed limitations. However, the Examiner notes that the limitations "a temperature ... during a soldering process " are process limitations in product claims. Such process limitations define the claimed invention over the prior art only to the degree that they define the product itself. A process limitation cannot serve to patentably distinguish the product over the prior art, in the case that the product is the same as, or obvious over, the prior art. See Product-by-Process in MPEP 2113 and 2173.05(p) and In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985).

2.3. Claims 5, 6, 12 and 18 are rejected under 35U.S.C. 103(a) as being unpatentable over AAPA in view of Hoag as applied to claims 1, 4, 8, 11, 13, 14, 17 and 19 above, and further in view of Mitsuhashi et al. (US 6235371) hereinafter Mitsuhashi.

Regarding claims 5, 6, 12 and 18: AAPA as modified by the teaching of Hoag discloses all the features of the claimed invention as applied to claim 1(8, 14) above, wherein film capacitors are constructed by combination of a polypropylene film and a metal foil [0005],

except AAPA doesn't explicitly teach the film capacitors are constructed by a combination of a polypropylene film and an aluminum foil, or an aluminum-deposited polypropylene film.

Mitsuhashi teaches (col. 1: 11-18) the film capacitors are constructed by a combination of a polypropylene film and an aluminum foil, or an aluminum-deposited polypropylene film.

Therefore it would have been obvious to one of ordinary skill in the art, at the time the invention was made for AAPA to include in his invention the film capacitors are constructed by a combination of a polypropylene film and an aluminum foil, or an aluminum-deposited polypropylene film, as taught by Mitsuhashi in order to maintaining its dielectric and mechanical properties at the high level even when used under the severe environments, as taught by Mitsuhashi, (col. 2:28-33).

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hoerpel et al. - PG Pub. No. 2007/0139860;

Uematsu et al. – US 7405920;

Hongu et al. – US 6917512.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yuriy Semenenko whose telephone number is (571) 272-6106. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean A. Reichard can be reached on (571)- 272-2800 ext. 31. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Y. S./

Examiner, Art Unit 2841

/Dean A. Reichard/

Supervisory Patent Examiner, Art
Unit 2841